

ORIGINAL RESEARCH

Knowledge, Attitudes and Practice of Tehran Citizens regarding the Social Distancing rules and its Related Factors during the COVID-19 Pandemic

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Abstract: **Introduction:** Due to the importance of social distancing in reducing the risk of transmission in Covid-19, contributing factors on success or failure of these rules are still unknown in Iran. The purpose of this study was to determine the level of knowledge, attitude and practice of the public about this rule and its requirements during the Covid-19 pandemic. **Methods:** This cross-sectional study was performed on 400 citizens over 18 years of age in Tehran city. Knowledge, attitude and practice regarding social distancing were assessed using a questionnaire and collected using electronic method (online). Data were analyzed using STATA software version 14 and descriptive and analytical statistics. **Results:** 371 (response rate: 92.5%) residents completed the questionnaire. 24% (n=27) knew the social distancing well. The mean \pm SD of attitude score was 2.4 ± 4 and 72% of the respondents was against the recommendation to observe intelligent distance. The mean knowledge and attitude scores were slightly higher in men than in women (3.69 vs. 3.55 and 2.51 vs. 2.20, respectively), but the mean practice score was lower in men (3.44 vs. 3.77) and all were not statistically significant. **Conclusion:** The respondents' knowledge of the rule of social distancing during the COVID-19 pandemic was good, although people do not have a positive attitude towards this law. Although in some cases, such as in-person shopping, it was necessary to comply with this law, in most cases, such as keeping a distance of at least 1.5 meters with other people, avoiding handshakes, kissing and traveling was observed by a small percentage of people.

Keywords: Attitude; COVID-19; Knowledge; Practice; Social-distancing

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1. Introduction

On December 31, 2019, the Chinese government notified the World Health Organization (WHO) of an outbreak of a type of coronavirus in Wuhan. This new type of coronavirus is now called SARS-CoV-2 and the resulting disease is called COVID-19 (1). The rapid spread of the COVID-19 epidemic has led the WHO to classify and announce the epidemic as a global emergency such as the H1N1 (2009), Polio (2014),

Ebola (2014) and Zika (2016) epidemics (2). The first case of this disease in Iran was reported on February 19, 2017 in Qom with the identification of two patients (3).

Given that there is no specific vaccine or drug for COVID-19, the only way to control the disease is through traditional public health measures (4). The concept of quarantine means restricting activities of susceptible persons who have contact with infected people without showing any sign or symptoms. Quarantine can be applied at the individual or community level while it also can be in either optional or mandatory form (5).

Social distancing is a form of community-level quarantine with the aim to reduce social interactions among people in a large community. Examples of social distancing enforce-

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ments include closure of schools, offices and shopping malls, as well as the cancellation of mass gatherings. Social distancing can provide the healthcare system with a chance to be more resilient to large numbers of patients by delaying the spread of epidemic (4). In March 2020, the government of the Islamic Republic of Iran decided to impose more restrictions to prevent further spread of the coronavirus by implementing a more serious social distancing plan. The social distance scheme reduces people's physical contact as well as prevents unnecessary long-distance travel. After the two-stage and relatively successful implementation of this plan, the government decided to implement the third phase, namely intelligent spacing, which aims to gradually reopen jobs with low risk of disease transmission on March 11, 2020. Due to the many cultural differences in the Iranian society, the level of people's participation in this project is not known and the initial predictions on the success or failure of the social distancing project are unclear.

Due to the importance of the issue of social distance planning during the coronavirus outbreak, the Men's Health and Reproductive Health research center has decided to conduct research on the level of knowledge, attitude and practice of the community about the social distancing rules. The results of this study can be used to develop awareness and information programs about the benefits of this rule and use it to develop prevention programs during future outbreaks and epidemics.

2. Materials and Methods

This cross-sectional study was conducted on the residents of Tehran city during the spring of 2020. The target population was all citizens over 18 years of age living in Tehran. For the study, a sample size of 400 people was calculated who were randomly selected. The outcome of the study was defined as knowledge, attitude and practice about the law of social distancing, which was made using a researcher-made questionnaire and collected from online forms.

The questionnaire consisted of 4 sections, as follows: demographic and background information section (including age, sex, marital status, education, history of acquiring COVID-19, history of diagnostic tests for coronavirus), Knowledge section (four questions about the provisions of social distancing), Attitude section (including five questions about the person's attitude and values about social distancing) and Practice section (including work status during the outbreak, rate of suburban travel, social relations, and pattern of leaving the house). A researcher-made checklist was also used to assess perceived anxiety about COVID-19 infection, which was taken from a similar study in China due to the need to compare questions (6). The questionnaire was prepared after examining the content validity (using expert opinion) and

reliability (on a sample of 15 respondents) in the form of an anonymous online form through social networks. In order to maintain confidentiality, no questions were asked regarding personal information (such as name, national ID, address or contact number). Data analysis was performed using STATA software version 14.

3. Results

In this study, 400 people participated in completing the online form, of which 371 had complete answers for statistical analysis (response rate = 92.5%). The demographic characteristics of the participant are shown in Table-1. Most respondents (79%) were men. In terms of employment status, about 20% were students, 14% employees, 1% retireds, and 6% were self-employed.

In terms of education, most respondents had a bachelor's degree (39%) and a master's degree or higher (31%). In terms of marital status, most were married (59%). With respect to the at risk family members for COVID-19, elderly people were present in 34% of families, and 32% had members with a chronic disease. Regarding contact status of the respondents with COVID-19 patients, only 3% of the respondents were confident about their contact with a patient, while 92% did not have such contact and 3% were not sure of their contact status. In total, 21 (5%) respondents reported a confirmed diagnosis of COVID-19 infection (Table-1).

With respect to the participants' knowledge, 21% (n=79) reported complete knowledge about the social distancing rules and 51% (n=191) had partial knowledge and 27% (n=101) said they had no information in this regard. Moreover, 78.4% (n=291) were correctly aware of the law of travel during the social distancing period (authorized city travels and unauthorized travels to other cities). 100 respondents (27%) were well aware of the law authorizing the entry of non-locals into cities through city bypass routes. For vehicles other than the City Prohibition Act, which only applies to emergency vehicles, fire brigades, and police, 18% (n=70) had good knowledge. Finally, 90.3% (n=335) had correct knowledge about the activity of authorized occupations during the epidemic (Table-2).

The mean±SD attitude score was 2.4±4 (range=0-10). 72% opposed the recommendation to observe smart distance, 73% said that they could not cancel their trip during this period due to the habit of traveling, 76.5% believed that the restriction by the law of social distancing has created unnecessary limitations in their lives, and approximately 25% believed that the social distance law requires taking further actions in order to be effective (table 3).

Examination of perceived anxiety from the corona epidemic also showed that the mean±SD score of perceived anxiety due to the coronavirus was 20.4±2 (range: 7-28). 83% of

Table 1: Demographic characteristics of the research participants

Variable	Subgroup	Number	Relative Frequency
Sex	Male	294	79.2
	Female	77	20.7
Occupation	Student	76	20.4
	Employee	53	14.3
	Retired	4	1
	Self employed	23	6.2
	Other	215	57.9
Education	Diploma	86	23.1
	College degree	23	6.2
	BA. , BSc.	146	39.3
	MA. , MSc. and higher	116	31.2
Marital Status	Single	142	38.2
	Married	220	59.3
	Other	9	2.4
High-risk family members	Pregnant member	1	0.27
	Members with underlying health conditions	121	32.7
	Elderlies	128	34.6
	Members with history of invasive surgery	30	8.1
	Children aged under five	89	24
Contact with a known COVID-19 case	Yes	12	3.2
	No	346	92.2
	Uncertain	13	3.5
COVID-19 Diagnosis	Yes	21	5.6
	No	349	94.3

Table 2: Responses to Questions Regarding Social Distancing

Knowledge	Correct responses (N,%)	Incorrect responses (N, %)
Travel restrictions	291 (78.4%)	80 (21.6%)
Admittance of non-residents to cities	100 (27%)	271 (73%)
Exempted vehicles for transportation	70 (18.8%)	301 (81.1%)
Authorized occupations	335 (90.3%)	36 (9.7%)

people reported often thinking about COVID-19 while another 9% were constantly thinking about it. Serious concerns about COVID-19 contraction of family members reported often from 83% of people while another 9% were always thinking about it One percent of the respondents had permanent and 3% had occasional insomnia due to COVID-19 disease. Severe restrictions on social relationships were reported by 57% of the respondents due to the pandemic and 49% had stopped ordering take away food. Fear of hearing or watching news of COVID-19 in the media was reported permanently in 66% and occasionally in 27% (Table-4).

Regarding confiding with other people about concerns caused by the epidemic, 312 (84%) said they do not confide with anyone, 33 (8.9%) consult with their spouse or a family member, 21 (5.6%) consult with colleagues or friends, 1 (0.27%) consulted with 4030 online system (phone number specifically used for COVID-19 consultation) and 4 (1%) people had consulted with a doctor or healthcare staff. Regarding personal strategies for overcoming COVID-19 anxiety, the re-

spondents stated strategies such as staying home, following health tips, not following radio and television news, trust in God, and studying and reading about the illness.

With respect to practice, 20.5% (n=76) have not attended their work place since the onset of the corona epidemic, 17.5% (n=65) have worked in shift works and 62% (n=230) have been constantly present at work. Measures taken by individuals to prevent COVID-19 infection since the onset of the epidemic included: maintaining a distance of at least 1.5 meters with other individuals (n=62 , 12.7%), avoiding handshakes and kissing (n=93, 19.1%) , avoiding travel (n=85, 17.4%), not using public transport (n=86, 17.6%), not going to parks (n=76, 15.6%), and not ordering food (n=84, 17.2%). To prevent unnecessary trips outside the house, 30% (n=42) prepared more alcohol and disinfectants than usual, 23% (n=33) prepared home necessities online, 33% (n=46) prepared household goods more than they needed; while 13% (n=18) mentioned that they leave home whenever they feel necessary. Regarding the sources of information about



Table 3: Responses to Questions Regarding the Attitude towards the law of Social Distancing- Frequency (%)

Attitude	Agree	No idea	Disagree
I do recommend others to comply with the social distancing rules	98 (26.5%)	4 (1%)	268 (72.4%)
I cannot stop going on trips during the pandemic, since I am used to travelling	273 (73.7%)	10 (2.7%)	88 (23.7)
I believe that social distancing law has imposed unnecessary restrictions on people's lives	64 (17.3%)	23 (6.2%)	283 (76.5%)
In my opinion, social distancing law was an efficient solution to make people stay at home during the New year's holiday	81 (21.9%)	16 (4.3%)	273 (73.7%)
For the social distancing law to be effective, it must be accompanied by other preventive measures	92 (24.8%)	10 (2.7%)	268 (72.4%)

Table 4: The perceived anxiety in participants due to COVID-19 disease- Frequency (%)

Item	Never	Rarely	Often	Always
I think about COVID-19	4 (1%)	26 (7%)	309 (83.5%)	31 (9.3%)
I am worried about being infected with Coronavirus	5 (1.3%)	38 (10.2%)	310 (83.7%)	17 (4.6%)
I am worried about my family members being infected with Coronavirus	3 (0.8%)	22 (5.9%)	310 (83.7%)	35 (9.4%)
I suffer from sleep disorders due to my anxiety over Coronavirus	52 (14%)	302 (81.6%)	11 (3%)	5 (1.3%)
I have cut some of my social relationships down due to the fear of getting the Coronavirus	3 (0.8%)	104 (28.1)	21 (57.5%)	50 (13.5%)
I have restricted takeaway foods due to the fear of catching the Coronavirus	2 (0.5%)	83 (22.4%)	103 (27.8%)	182 (49.1%)
I grow anxious when I hear the Coronavirus news from the media	10 (2.7%)	17 (4.6%)	99 (26.7)	244 (66%)

COVID-19 disease, 48.6% (n=180) reported television/ radio or the Internet, 32% (n=119) reported social networks, and 19% (n=70) reported physicians or nurses. Most respondents (n=136, 36.8%) preferred receiving COVID-19 information from the public media (including radio/ television), followed from medical staff (24%), social networks (19.5%), and the Internet (19.5%). Distribution of knowledge, attitude and practice scores by gender showed that the mean knowledge score was slightly higher in men than women (3.69 vs. 3.55), which was not statistically significant ($P=0.234$). The mean attitude score was non-significantly higher in men than women (2.51 vs. 2.20, $P=0.274$). The mean practice score in men was non-significantly lower than women (3.44 vs. 3.77, $P=0.164$) (Table-5).

4. Discussion

COVID-19 is an emerging infectious disease in the world. In today's modern world, interactions among people take place by using new technologies; however, most daily activities depend on physical interactions. On the other hand, achieving economic prospects often requires community contact and interaction (7). Recent studies suggest that the law of physical distancing reduces the spread of the coronavirus. It has been estimated that proper adherence to the law of social distancing can reduce the incidence of coronavirus by approximately 92% (8).

Governments in many countries have restricted travel and provided people with working conditions at home, thus preventing the spread of the coronavirus, although laboratory kits for COVID-19 testing are limited worldwide. Only pa-

tients with symptoms refer for COVID-19 testing and asymptomatic carriers are still not diagnosed (9). On the other hand, the lack of laboratory equipment and kits is another limitation for diagnosis. Therefore, adhering to the law of social distancing is mentioned as a cost-effective and effective method in controlling the disease (10).

The results of this study showed that the knowledge of Tehranian citizens about the different aspects of the law of social distancing is diverse. Most had desirable knowledge about some aspects such as travel status and in other aspects such as prohibitions for commuting the knowledge was limited. One of the reasons for this difference can be attributed to the lack of information provision sufficiently or lack of attention by the citizens due to the anxiety caused by the disease.

The results indicated that most participants had disease anxiety, which was consistent with other studies (11-13). Anxiety and health concerns are common psychological reactions to COVID-19 (12). In another study, Karimi and Izadi reported a positive and significant relationship between increased anxiety with decreased health (11). Given the fast spread and high prevalence of COVID-19 infection, it seems reasonable for people to be anxious and try to come up with prevention ways. In this situation, it is essential to maintain the mental health of people because people in different parts of society may experience stressful stimuli during the pandemic. Therefore, in the current high-risk era, it is necessary to identify people prone to psychological disorders in different levels of the society whose mental health may be endangered, to maintain the mental health of individuals with appropriate psychological strategies and techniques.

We found unsatisfactory attitude towards the law of social

Table 5: Distribution of knowledge, attitude and practice scores by sex

Domain	Male	Female		P value	
	Mean (Standard Deviation)	Mean (Range)	Mean (Standard Deviation)		Mean (Range)
Awareness	3.69 (1.46)	4 (8-1)	3.55 (1.38)	4 (7-0)	0.234
Attitude	2.51 (4.09)	0 (10-0)	2.20 (3.82)	0 (10-0)	0.274
Knowledge	3.44 (2.78)	3 (10-1)	3.77 (2.30)	3 (10-1)	0.164

distancing in our sample. Therefore, the gap of education and receiving information in this field is obvious. The use of educational programs related to the law of social distancing and its benefits and effects in controlling COVID-19 infection is a necessity and can affect all aspects of people's lives in the current situation. Increasing community's knowledge about this law is considered as a prerequisite and necessity to create the right attitude and adopt appropriate behaviors. Although it is very difficult to change the level of performance only through training and this requires more time and support, the role of educational interventions in increasing the level of awareness, attitude and practice of people is very prominent.

According to the research and the results of this study, which showed the low level of knowledge and attitude of individuals, it seems that the design and implementation of educational programs related to the law of social distancing and the establishment of appropriate laws to implement the principles of this plan by policy makers and relevant officials can play an effective and valuable role in promoting awareness, attitude and practice of individuals. It is expected that by reducing the level of contact of individuals through full compliance with the law of social distance, effective steps can be taken to break the chain of infection transmission and ultimately control the epidemic.

The present study was one of the first studies to investigate the level of knowledge, attitude and practice of citizens of Tehran regarding the law of social distancing. A researcher-made questionnaire was used to assess knowledge, attitude and practice, which was distributed and completed online. The online nature of the form and not needing a face-to-face or telephone interview can be very effective in reducing random or regular errors (reporting bias). On the other hand, one of the weaknesses of the study was the very limited participation of individuals. According to the estimates made by the research team, the project design questionnaire was shared in more than 30 virtual groups in two programs, Telegram and WhatsApp, which was available to over 1000 different subscribers. Therefore, it is possible that the participants in this project are a select sample of citizens. This issue should be considered when generalizing the results of this study to all citizens.

5. Conclusion

The respondents' knowledge of the law of social distancing during the COVID-19 pandemic was good, although people do not have a positive attitude towards this law. Although in some cases, such as in-person shopping, it was necessary to comply with this law, in most cases, such as keeping a distance of at least 1.5 meters with other people, avoiding handshakes, kissing and traveling was observed by a small percentage of people.

6. Appendix

6.1. Acknowledgements

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6.2. Author contribution

All the authors have shared the same workload and thereby are entitled to equal acknowledgement.

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None.

6.4. Conflict of interest

The authors declare no conflict of interest.

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